

Appl. No. 10/575,000

Atty Dkt. No. 112780-053

Response to Office Action mailed June 18, 2007

REMARKS

The non-final Office Action was issued on pending claims 1-8. Claims 1-8 stand rejected. In this Response, claims 1, 3-6 and 8 have been amended, claims 2 and 7 have been cancelled without prejudice and claim 9 has been added. Thus, claims 1, 3-6, 8 and 9 are pending in the application.

Applicants invite the Examiner to call Applicants' Representative to discuss any issues with this application.

Priority

The Office Action at page 2 asserts that a copy of PCT/JP2004/144827 was not submitted with the filing of this application. However, a copy of the PCT application (publication no. WO 2005/035883) was submitted with the filing of the application. The designated states are listed on the back side of the first page and include US as a designated state. Applicants submit another copy of just the front and back sides of the first page of WO '883 (PCT '827) as requested in the Office Action.

Thus, Applicants submit the present application should be granted §371 status.

Specification

The Office Action at page 2 requests references to specific claims in the specification be deleted.

In response, the specification has been amended at paragraphs [0023], [0029], [0031], [0033] and [0038] and paragraph [0037] has been deleted to remove the references to specific claims.

Thus, Applicants submit that the objections to the specification have been overcome.

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Claim Rejections – 35 USC §112

At page 2 of the Office Action, claims 1-8 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In response, claims 1, 3-6 and 8 have been amended to clarify the claims. Also, claims 2 and 7 have been cancelled without prejudice. Thus, Applicants submit the claims are clear and definite. The specification has been amended to be consistent with the amended claims.

Therefore, Applicants submit the §112, second paragraph, rejections should be withdrawn.

Double Patenting

The Office Action at page 2 asserts that should claim 4 or claim 5 be found allowable, claim 7 or claim 6 respectively would be objected to under 37 CFR §1.75 as being a substantial duplicate thereof. Applicants respectfully disagree.

Never-the-less, claims 5 and 6 have been amended to clarify the claims. Amended claims 5 and 6 are different embodiments of claim 4 and are clearly not substantial duplicates. Further, claim 7 has been cancelled without prejudice. Thus, Applicants submit the double patenting objection should be withdrawn.

Allowable Claims

At page 5 of the Office Action, claims 3 and 8 were noted as being allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph, and to include all of the limitations of the base claim and any intervening claims. Applicants thank the Examiner for the notice of allowable claims.

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New independent claim 9 has been added. Claim 9 contains features of amended claim 1 except the features of claim 2 are omitted. Claim 9 also includes the features of allowable claim 8.

Thus, Applicants submit claim 9 is allowable.

Claim Rejections – 35 USC §102, 103

At pages 3 and 4 of the Office Action, claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103 as obvious over Saotome (US 4,995,517); using Yamashita (US 5,752,546). At pages 4 and 5 of the Office Action, claims 2 and 4-7 were rejected under 35 U.S.C. §103 as being unpatentable over Saotome in view of Eiji et al. (JP 06-330535). Applicants respectfully disagree.

As to the §102(b), or in the alternative §103, rejection of claim 1, claim 1 has been amended to include features from dependent claim 2, and claim 2 has been cancelled without prejudice. Claim 2 was not rejected under §102(b). Therefore, Applicants submit that the §102(b), or in the alternative §103, rejection of claim 1 should be withdrawn.

As to the §103 rejection of claim 2, independent claim 1 has been amended to include features from claim 2 and claim 2 has been cancelled. Amended claim 1 calls for "the ride valve body is disposed on the bucket valve body in a laminated manner, the ride control valve 31B and the directional control valve are connected through an internal piping in the ride valve body and the bucket valve body, the travel vibration suppressing device comprises a first pressure sensor 81 for detecting a load pressure of the actuator 11, and a communication opening area of the ride control valve 31B which communicates between the accumulator 27 and the pressure chamber is controlled on a basis of a detected signal from the first pressure sensor 81." The reference numbers inserted into the claim text are for reference purposes to the examples of Applicants' invention and are not intended to limit the claims. These features of claim 1 are not shown, described or suggested by Saotome or Eiji et al. or Yamashita.

As to Saotome, Saotome describes an accumulator 53 which communicates with a boom lift cylinder 50 through a switch valve 42 to provide switching from a state of communication to a state of communication through a check valve. However, Saotome does not have the feature of

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a cutoff of the communication between the accumulator 53 and the boom lift cylinder 50. Furthermore, Saotome does not have a pressure sensor which detects a load pressure of the boom lift cylinder 50. Accordingly, the present invention is quite different from Saotome.

As to JP '535, JP '535 uses a pressure differential before and after a variable throttle 8a to control the amount of opening of the variable throttle 8a. On the contrary, in the present invention, the pressure at the actuator 11 is adjusted by way of communication between ports rather than control by an opening of a valve at a stroke position. Thus, the adjustment feature of Applicants' invention is quite different from JP '535.

As to Yamashita, Yamashita merely has a laminated body. Yamashita does not describe, show or suggest a travel vibration suppressing device.

As to new claim 9 (amended claim 1, the features of claim 2 being omitted, and with features of allowable claim 8), the travel vibration suppressing device comprises "a speed increasing valve for increasing a supply amount of the pressure oil from the hydraulic pump to the actuator, the speed increasing valve is constructed in a speed increasing valve body, the speed increasing valve is disposed on the ride valve body or the bucket valve body in a laminated manner, and the speed increasing valve and the ride control valve or the directional control valve are connected through the internal piping in each body and/or an external piping outside of each body." These features are not described, shown or suggested by any of the cited references.

Furthermore, due to the speed increasing valve of claim 9, it is possible to circulate a supply flow rate and a discharge flow rate with respect to the actuator from the speed increasing valve disposed in a laminated manner. See the specification at paragraph [0038]. Because it is possible to alternatively control part of the flow rate of the pressure oil supplied to and discharged from the actuator by the speed increasing valve, it is possible to mount the travel vibration suppressing device in accordance with the present invention on middle-scaled and large-scaled working vehicles, so as to achieve an excellent vibration suppressing effect. These effects are not expected from any of the cited references.

Moreover, none of the cited references describe, show or suggest Applicants' speed increasing valve body disposed on the bucket valve body in a laminated manner, and the ride

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control valve and the directional control valve connected through the internal piping in the ride valve body and the bucket valve body, as claimed in claim 9.

Applicants' claimed invention can provide remarkable effects. See the specification at paragraphs [0029] and [0030]. Such remarkable effects are not expected from any of the cited references.

Consequently, the features of Applicants' invention recited in claims 1 and 9 are not disclosed or suggested by any of the cited references. Therefore, independent claims 1 and 9 are allowable over the cited references. The dependent claims are allowable at least for the reasons that independent claim 1 is allowable.

Thus, Applicants submit that the §103 rejections should be withdrawn in addition to withdrawal of the §102 rejections.

CONCLUSION

For the foregoing reasons, Applicants submit that the patent application is in condition for allowance and request a Notice of Allowance be issued.

Respectfully submitted,

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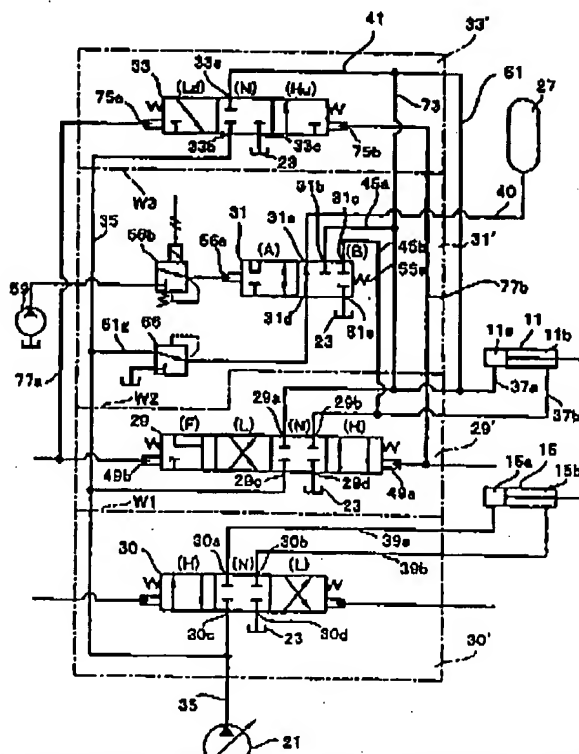
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[続編有]

(54) Title: TRAVEL VIBRATION SUPPRESSING DEVICE FOR WORKING VEHICLE

(54) 発明の名称: 作業車両の走行振動抑制装置



(57) Abstract: A travel vibration suppressing device (20) has a directional control valve (30) for a bucket, a directional control valve (29) for a boom, a ride control valve (31), and a boom speed increasing valve (33) that are integrally layered on each other with internal piping. A bottom chamber (11a) of a boom cylinder (11) and an accumulator (27) are communicated or shut off from each other by the ride control valve (31). The boom speed increasing valve (33) is capable of feeding a discharge pressure from a hydraulic pump (21) to the bottom chamber (11a) or a head chamber (11b), and is also capable of connecting the bottom chamber (11a) or the head chamber (11b) to a tank (23).

(57) 要約: 走行振動抑制装置20は、バケット用方向制御弁30、ブーム用方向制御弁29、ライドコントロール弁31及びブーム増速弁33が内部配管により一体に積層配設された構成となっている。ライドコントロール弁31によりブームシリンダ11のボトム室11aとアキュムレータ27との連通又は遮断を行う。ブーム増速弁33は、ボトム室11a又はヘッド室11bに油圧ポンプ21の吐出圧を供給したり、ボトム室11a又はヘッド室11bをタンク23に接続させることができる。

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